that the dimensions of the illustrations are perfectly true, but had a few measurements been given with each illustration this probability might have become a certainty.

The work incites, but does not satisfy; which should not be taken as criticism, but rather as a stimulus for the future. We need more than tracings. We need, in a most precise form, every possible detail concerning the cranium as well as the rest of the skeletal and physical make-up of the Australian; and may Drs. Berry and Robertson be soon in a position to give us this information.

Aleš Hrdlička

The Culture and Diseases of the Sweet Pea. By J. J. Taubenhaus. New York, E. P. Dutton & Co. Pp. xx + 232.

In the preface the announcement is made that this book is primarily intended to be a practical treatise for use by both growers of sweet peas and investigators. Those interested in the culture of this plant will no doubt find this book a very useful and helpful guide. It is among the few books which deal with both the culture and diseases of one particular crop. The author's reason for including both phases in the same treatise is naïve in that "the attack of most plant diseases depends on some weak point in the cultural methods which has weakened the host at some phase of its life history."

The first eighty-nine pages are devoted to explicit cultural directions which have been prepared for the author by specialists. The following ninety-five pages are given to a consideration of greenhouse and field troubles, including nine diseases of fungous origin, one of bacterial origin and a brief summary of the several insect pests. Due space is given in the closing chapters, in a clear, concise manner, to methods of prevention and control of these maladies.

The essential facts in the author's several important investigations on the diseases of sweet peas are summarized in this book, yet it is believed that the investigator would prefer to consult the original reports. The grower, himself, can best judge of the author's success in avoiding the use of technical terms. This same difficulty which confronts every teacher of elementary plant pathology has been encountered, and if one were to put himself in the position of the average reader he would find himself at times in a maze of meaningless terms. Certainly the person of less than collegiate training would find himself hopelessly lost if he attempted to wade through certain paragraphs in this book and at such points, one is even disposed to wonder what verbiage the author would have chosen had he purposed to use technical terms.

The binomial *Ascochyta pisi* Lib. was probably employed because it is better known than is the name for the ascigerous stage.

The book is well and amply illustrated, is unusually free from typographical errors and gives the impression of being condensed yet complete. It should have a place in the reference library of plant pathologists and of growers of sweet peas.

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FIELD CONFERENCE OF CEREAL PATHOLOGISTS

The Third Annual Field Conference of Cereal Pathologists of the American Phytopathological Society was held at Madison, Wisconsin, on July 9, 10 and 11. About forty were in attendance at the various meetings. The following program was presented:

MONDAY, JULY 9

The forenoon was spent in visiting the plant pathology laboratories of the University of Wisconsin. In the afternoon, after a discussion by Dr. A. G. Johnson upon "Imperfect Fungi causing Cereal Diseases," the session was continued in the field, where Dr. Johnson's experimental plots were examined. In the evening a supper and smoker were given at the University Club, and in the round-table discussion which followed, the following discussions were given:

1. *Grass rusts and their rôle in cereal conservation;* Leaders, *Dr. J. C. Arthur, Dr. E. C. Stakman.* Dr. Arthur gave a historical dis-

cussion of rust work, with especial reference to his work in preparation of the rust section of the North American flora. Dr. Stakman pointed out five problems in the study of grass rust: (1) Biological specialization; (2) accurate knowledge of distribution of biologic forms in relation to rust epidemics; (3) the rôle of grass rusts in over-wintering uredinia; (4) the rôle of grass rusts in passing epidemics from the barberry to grain; (5) grasses acting as agencies for passing epidemics from one grain field to another.

2. *The relation of the barberry to rust epidemics;* Leaders, *Dr. E. M. Freeman, Dr. E. M. Wilcox.* In the absence of both of the above, Dr. Stakman led the discussion upon this topic also. Mr. Frank Piemeizel, who has charge of the Rust Survey now in progress in the Mississippi Valley, stated that the survey so far had indicated that stem rust overwinters in the extreme South in the uredinial stage, and that the amount of infection upon grain was found to decrease in passing from the south to the north. South of Ames, Iowa, no infection upon barberry was found, but north of that point no infection was found upon grain up to that time, except in the vicinity of affected barberry bushes.

3. *State and Federal legislation against the barberry;* Leaders, *Professor L. H. Bolley, Dr. L. R. Jones.* Professor Bolley reviewed the methods used in securing eradiction of barberry in North Dakota, which is the only state having a law declaring the barberry bush a nuisance. The work of eradicating the barberry bushes in North Dakota has almost been completed. Dr. Jones was unable to be present at the session.

TUESDAY, JULY 10

The forenoon was spent in visiting the farm near Madison operated by the Agronomy Department of the University of Wisconsin. In the afternoon the party went by auto from Madison, Wisconsin, to Watertown, Wisconsin, inspecting various grain fields on the way. In the evening a supper, smoker and round-table was held at the Commercial Hotel at Watertown. The following discussions were given:

1. *State and Federal cooperation in fighting cereal diseases during our food emergency;* Leaders, *Dr. H. B. Humphrey, Dr. F. L. Stevens, Dr. S. G. Kern.* Dr. Humphrey outlined a plan for campaign for eradication of preventable cereal smuts. This work, dependent upon the passage of the Food Bill, is to be done in cooperation with the Extension Service, and is to consist of two phases: first, publicity campaign, by means of the press, posters, etc.; second, men to be sent into the field to cooperate with the Extension Service in securing seed treatment. The subject of community seed treatment plans was also brought up for discussion. Dr. Kern spoke for the need of closer cooperation between the Federal and State Departments, and between states in their work, and of the value in correlating work upon general problems with local ones. Dr. Stevens was not present at the meeting.

2. *Recent investigations on yellow stripe rust; Charles W. Hungerford.* An account was given of work being carried on at Corvallis, Oregon, upon this disease.

WEDNESDAY, JULY 11

The day was spent in Juneau, Wisconsin, Beaverdam, Wisconsin, and on the farm of Mr. Kruger near Beaverdam. Meetings were held at the Court House in Juneau, and at the Mealy Hotel at Beaverdam. These meetings were open for general discussion and transaction of business.

The following business was transacted at the various meetings:

It was voted to have the secretary communicate with the Secretary of the Interstate Cereal Conference to arrange, if possible, to have the next meeting of Cereal Pathologists held at the same place as the Cereal Conference, with one day overlapping for joint meeting.

A committee consisting of Dr. L. R. Jones, Dr. H. B. Humphrey, drew up the following resolution, which was unanimously adopted:

TO THE HONORABLE,
THE SECRETARY OF AGRICULTURE.

We, the plant pathologists representing the chief grain-growing states in conference

assembled, in recognition of the following facts:

1. The national and international need of the maximum production of all food grains for the immediate future.
2. The preventable losses resulting from smuts and other seed-borne diseases.
3. Practical and simple methods of seed treatment known to prevent such losses.
4. The Office of Cereal Investigations has already instigated a movement looking to the more universal treatment of seed for the prevention of these losses.

Resolve: (1) That it is our conviction that this work should be pushed with all possible diligence. (2) That we as representatives of these grain-growing states pledge to this work our hearty cooperation and support.

A committee consisting of Professor H. L. Bolley, Professor M. A. Carleton, and Dr. L. R. Jones, appointed to draft resolutions for the extermination of the barberry bushes, made the following report, which was accepted:

In view of the vital importance of the wheat crop, and as a national emergency measure likely to prove an effective aid in increasing and insuring a better wheat crop in 1918, be it resolved:

That we, the cereal pathologists of the American Phytopathological Society, in summer session assembled at Madison, Wisconsin, respectfully ask the President of the United States to appoint a commission to consider the relation of the barberry to outbreaks of black stem rust of wheat, barley, other cereals and grasses with a view of deciding upon the desirability of eradiction of all cereal rust-bearing strains of the barberry in the United States in order that this source of rust epidemics may be removed.

Be it further resolved that the Secretary be instructed to send a copy of this resolution to the President of the United States.

The following resolutions were also adopted by the Conference:

That the chairman of this body appoint a committee to take up with federal authorities the matter of securing some definite action to insure an adequate supply of fungicides and insecticides, particularly those containing copper, for the protection of important crops against the destruction of fungous diseases and insect pests and to insure a reasonable price for the same such as shall not be prohibitory to their use by the farmers and fruit growers of the United States.

To the Department of Plant Pathology and other Friends and Members of the University of Wisconsin:

Whereas, the cereal pathologists in meeting convened at Madison, Wisconsin, from July 9 to 11, were most hospitably entertained and assisted at their third annual meeting;

Resolved, that we extend our hearty thanks and express our due appreciation for your efforts in our behalf.

The following officers were elected for the ensuing year: Chairman, H. P. Barss. Secretary, C. W. Hungerford.

C. W. Hungerford,
Secretary

SPECIAL ARTICLES

THE POSSIBLE ORIGIN OF THE TOXICITY OF ULTRA-VIOLET LIGHT[1]

It is a general law of photochemical action that only those rays are effective which are absorbed by the system in which the reaction occurs.[2] Visible light-rays are not, as a general rule, selectively absorbed by protoplasm and hence their action is usually confined to specialized pigmented areas which constitute the receptive elements of optical sense-organs. Ultra-violet light, on the contrary, is generally highly toxic, even for colorless organisms, and since this toxicity presumably depends upon and is attributable to photochemical reactions the question presents itself to which constituent of the protoplasm are we to attribute the selective absorption of these rays which is the necessary precedent of their photochemical activity?

It was pointed out nearly forty years ago by Soret[3] that the majority of proteins exhibit a well-marked absorption-band in the ultra-violet spectrum. In seeking for the origin of this absorption-band Soret found that it is especially well exhibited by solutions of tyrosin,

[1] From the department of biochemistry and pharmacology, Rudolph Spreckels Physiological Laboratory, University of California.

[2] Eder, "Handbuch der photographie," Halle, 1884, p. 28.

[3] J. L. Soret, *Arch. d. Sc. phys. et nat. Geneva,* 1878, pp. 322, 359; 1883, pp. 194, 204. A. d'Arsonval, *Arch. de Physiol. Norm et Path. Paris,* 1890, Sér. 5, T. 2, p. 340.